

REMARKS

Claims 1-3 and 5-15 are pending in this Application. Claims 4 and 16 have been previously canceled without prejudice. In the Office Action mailed January 17, 2006, the Examiner:

- maintained his rejection of Claims 1-3 and 5-15 under the judicially created doctrine of obviousness-type double patenting;
- rejected Claims 1-3 and 5-15 under 35 U.S.C. § 102(a and b) as anticipated by or, in the alternative, under 35 U.S.C. § 103(a) as being obvious over Garnier (US Patent No. 4,661,137), Kawachi et al. (US Patent No. 5,594,684), Yamada et al. (US Publication No. 2001/0043996) or Pawlowski et al. (Abstract from Silikattechnik 1982;33:339-40);
- rejected Claims 1-3 and 5-15 under 35 U.S.C. § 112, first paragraph, and 35 U.S.C. 132 as including new matter; and
- rejected Claims 1-3 and 5-15 under 35 U.S.C. § 112, first paragraph, for not setting for the subject matter regarded as the invention.

Applicants again thank the Examiner for discussing the above matters on two telephone interviews held April 12, 2006, and May 17, 2006. To this end, Applicants submit this Amendment in view of such telephone interviews.

Applicants respectfully submit amended Claim 1, amended to claim a building material "comprising a plurality of synthetic microspheres having an average particle diameter of between about

30 to 1,000 microns, said synthetic microspheres comprising an aluminosilicate material further comprising about 30-85% silicon oxide, about 6 to 40 wt.% aluminum oxide, about 5.2 to 30 wt. % calcium oxide, between about 4 to 10 wt.% sodium oxide, less than about 2 wt.% potassium oxide, wherein the microspheres have an alkali metal oxide content of less than about 10 wt.% based on the weight of the microspheres, and wherein the synthetic microspheres are substantially chemically inert." [Emphasis shows amended text.] Support for amended Claim 1 may be found throughout the originally-filed specification, see, for example, paragraphs [0025] and [0027] and Table 13. No new matter has been introduced with amended Claim 1. Accordingly, entry and allowance of amended Claim 1 is respectfully requested.

Claims Rejections - Nonstatutory Type Of Double Patenting

On page 2 of the Office Action, the Examiner rejected Claims 1-3 and 5-15 under the judicially created doctrine of obviousness-type double patenting as being unpatentable over Claims 1-45 of US Patent No. 6,572,697 (herein "Gleeson", US Publication No. 2004/0081827 (herein "'827 publication") and US Publication No. 2004/0080063 (herein "'063 publication"). Applicants agree with the Examiner statement that "the conflicting claims are not identical." Applicants further submit that with regard to Gleeson, the reference does not disclose a building material comprising "a plurality of synthetic microspheres having an average particle diameter of between about 30 to 1,000 microns, said synthetic microspheres comprising an aluminosilicate material further comprising about 30-85% silicon oxide, about 6 to 40 wt.% aluminum oxide, about 5.2 to 30 wt. % calcium oxide, between about

4 to 10 wt.% sodium oxide, less than about 2 wt.% potassium oxide, wherein the microspheres have an alkali metal oxide content of less than about 10 wt.% based on the weight of the microspheres, and wherein the synthetic microspheres are substantially chemically inert." Applicants respectfully request the Examiner point to such a teaching should it exist.

With respect to the '827 publication and the '063 publication, Applicants respectfully request the Examiner hold in abeyance the rejection under the judicially created doctrine of obviousness-type double patenting rejection until allowable subject matter is identified with the instant Application.

Claims Rejections - 35 U.S.C. § 112, first paragraph, and 35 U.S.C. 132

Applicants thank the Examiner for discussing a position provided on page 4 of the Office Action in which the Examiner stated that the claimed range for CaO is new matter. Applicants and Examiner were in agreement that with sufficient disclosure in the originally-filed specification, Applicants are able to claim a patentable portion of their invention. Applicants point out that the originally-filed specification explicitly discloses that a composition of the present invention may include divalent metal oxides, such as magnesium oxide, calcium oxide strontium oxide and barium oxide, "up to about 30 wt.%" (see para. [0025], part (iii)). Applicants further point to literal support of a patentable portion of the invention in Table 13 in which the specification further discloses embodiments of the claimed invention that include "about 5.2 to 30 wt.% calcium oxide" (see

Synthetic Microsphere "A" and Synthetic Microsphere "B"). Thus, Table 13 and other Examples in the specification show that Applicants, at the time the invention was made, had also envisaged the invention as claimed in amended Claim 1. Accordingly, Applicants submit that the specification reveals both a broad invention, e.g., in para. [0025] of the specification, as well as a patentable portion, as disclosed in the Examples and as exemplified in amended Claim 1. As such, a claimed range of "about 5.2 to 30 wt.% calcium oxide" is proper. As such, Applicants submit that Claims 1-3 and 5-15 do set forth subject matter that Applicants regard as their invention.

On page 5 of the Office Action, the Examiner further stated, "there is no literal support for 'at least one of these divalent metal oxides.' It appears from page 7 [0025] of the originally-filed specification that it is inclusive of all the divalent metal oxides and these need to be in the claim." Applicants respectfully disagree with such an interpretation and point out that stating "up to about 30 wt.% divalent metal oxides, such as MgO, CaO, SrO, and BaO" is not an explicit statement that the claimed range is inclusive of all the divalent metal oxides. One skilled in the art would not interpret the statement provided in the description at paragraphs [0025] and [0040] as being inclusive of all the divalent metal oxides.

On page 5 of the Office Action, the Examiner stated "the terms 'less than about 10 wt.% based on the weight of the microspheres' would appear to be new matter." Applicants respectfully submits that "less than about 10 wt.% based on the

weight of the microspheres" is, in fact, provided in the originally-filed specification at, e.g., paragraph [0020] and [0026] in which is explicitly disclosed that synthetic microspheres comprise "an alkali metal oxide content of less than about 10 wt.% based on the weight of the microspheres." In addition, Applicants point out that an agglomerate precursor of such microspheres includes "about 10 wt.% or less" as described in paragraph [0035] of the original filed specification. Accordingly, Applicants submit that the terms "less than about 10 wt.% based on the weight of the microspheres" are not new matter and overcome rejections under 35 U.S.C. § 112, first paragraph, and 35 U.S.C. 132.

Claims Rejections - 35 U.S.C. § 102(a and b) or 35 U.S.C. § 103(a)

Applicants submit that neither Garnier, Kawachi et al., Yamada et al. or Pawlowski et al. alone or in combination anticipate or make obvious Applicants' claimed invention. First, with respect to Garnier, the Examiner states that Garnier "teach a glass composition that can be used for a microsphere or glass bubble (a traditional use of glass) comprising amounts of components overlapping applicants' claimed synthetic microsphere composition (see col. 7, lines 5-14)." However, Applicants submit that Garnier does not teach or suggest each and every element of amended Claim 1 nor the claimed invention as a whole. For example, Garnier specifically teaches only glass compositions of soda-lime-silica (Col. 2, l. 5) and such "glass from traditional materials" of sand, lime sodium carbonate, and sodium sulfate (Col. 3, ll. 3-4) made with sulfur dioxide (Col. 4, l. 44). Garnier does not teach or suggest all the claim

limitations of amended Claim 1, such as microspheres comprising 6 to 40 wt.% aluminum oxide or a potassium oxide content of less than 2 wt.% (see Col. 7, ll. 4-21; Example 1; Example 6). In fact, Garnier teaches away from Applicants' claimed ranges in its disclosure by specifically including claimed ranges (Col. 7, ll. 4-21) that differ from those in the instant Application. Accordingly, Garnier does not teach or describe, expressly or inherently, each and every element as set forth in amended Claim 1 nor does Garnier have elements arranged as required by amended Claim 1. As such, amended Claim 1 is not anticipated by Garnier. Moreover, because Garnier teaches away from the claimed invention, there is no suggestion or motivation, either in the Garnier reference or to one of ordinary skill in the art, to modify Garnier in order to provide amended Claim 1 or to combine Garnier with any other reference, including Kawachi et al., Yamada et al. or Pawlowski et al. For this reason, there is no reasonable expectation of any success. In view of all factual information, amended Claim 1 is not anticipated by nor as a whole obvious over Garnier.

With respect to Kawachi et al. (herein "Kawachi"), the Examiner states that Kawachi "teach a glass bubble for a filler in a circuit board and the matrix material meets the limitations of the binder and the composition is the same or overlapping as that claimed by applicants on page 7 of their specification." Applicants respectfully disagree and point out that Kawachi does not teach or suggest each and every element of amended Claim 1 nor the claimed invention as a whole. For example, Kawachi does not teach or suggest compositions with about 4 to 10 wt.% sodium

oxide. Instead, Kawachi teaches specifically against this claimed range by explicitly disclosing harmful and deleterious effects when using Applicants' claimed range including, "If the bubble-forming glass contains $\text{Na}_2\text{O}+\text{K}_2\text{O}+\text{Li}_2\text{O}$ more than 1.9 wt. % . . . undesirable amount of the alkali element leaches from the glass bubbles into the substrate and badly affect the insulation resistance of the substrate" (Col. 4, ll. 2-9). Applicants further point out that, contrary to the Examiner's position (on page 7 of the Office Action), Table 1 of Kawachi does not teach compositions of the microspheres, but of "bubble-forming powders" used to prepare said microspheres and said microsphere compositions are, instead, disclosed in Table 2. In fact, Examples 12 and 13, as cited by the Examiner do not include each and every element within our claimed range. Moreover, these examples are the very formulations disclosed by Kawachi as being undesirable. Hence, Kawachi not only discloses different compositions and teaches away from Applicants claimed compositions, Kawachi does not teach or describe, expressly or inherently, each and every element as set forth in amended Claim 1 nor does Kawachi have elements arranged as required by amended Claim 1. As such, amended Claim 1 is not anticipated by Kawachi. Moreover, because Kawachi teaches away from the claimed invention, there is no suggestion or motivation, either in the Kawachi reference or to one of ordinary skill in the art, to modify Kawachi in order to provide amended Claim 1 or to combine Kawachi with any other reference, including Garnier, Yamada et al. or Pawlowski et al. For this reason, there is no reasonable expectation of any success or predictability in Kawachi to provide Applicants claimed invention. In view of all

factual information, amended Claim 1 is not anticipated by nor as a whole obvious over Kawachi.

With respect to Yamada et al. (herein "Yamada"), the Examiner states, "teach hollow aluminosilicate glass spheres that can be used as a binder for materials such as cement." However, Applicants point out that Yamada does not teach or suggest each and every element of amended Claim 1 nor does it teach or suggest the claimed invention as a whole. For example, Yamada discloses and claims microspheres in which "particle size is from 1 to 20 μm , preferably from 3 to 15 μm , as an average particle size based on volume" (para. 0023]. In addition, Yamada teaches away from larger particles describing explicitly that their described particles exhibit desirable characteristics while particles of larger size exhibit undesirable characteristics, such as larger particles of 16.8 μm (Example 4, para. [0100]) and 15 μm (Example 5, [0103]), said larger particles are disclosed to provide poor and undesirable characteristics, such as not forming independent spheres, forming foamed agglomerates, exhibiting poor heat resistance, formed as fused particles and having part of their hollow portion fractured (see, e.g., para. [0100], para. [0105]). Hence, Yamada not only discloses different compositions, but also teaches away from Applicants' claimed range by specifically teaching its undesirability. Accordingly, Yamada does not teach or describe, expressly or inherently, each and every element as set forth in amended Claim 1 nor does it have elements arranged as required by amended Claim 1. As such, amended Claim 1 is not anticipated by Yamada. Moreover, because Yamada teaches away

from the claimed invention, there is no suggestion or motivation, either in Yamada or to one of ordinary skill in the art, to modify Yamada in order to provide amended Claim 1 or to combine Yamada with any other reference, including Garnier, Kawachi or Pawlowski et al. In view of all factual information, amended Claim 1 is not anticipated by nor as a whole obvious over Yamada.

With respect to Pawlowski et al. (herein "Pawlowski"), the Examiner states that the reference "teach a hollow microsphere derived from coal ash with a composition that is in applicants' claimed range for synthetic microspheres (see abstract and page 7 of Applicants' specification)." Applicants further submit that Pawlowski does not teach each and every element of Claim 1 nor does Pawlowski teach or suggest the Applicants' claimed invention as a whole and specifically teaches away from Applicants' claimed range by disclosing an entirely different composition having a different claimed range. Accordingly, Pawlowski does not teach or describe, expressly or inherently, each and every element as set forth in amended Claim 1 nor does Pawlowski have elements arranged as required by amended Claim 1. For example, Pawloski does not disclose about 5.2 to 30 wt. % calcium oxide. As such, amended Claim 1 is not anticipated by Pawlowski. Moreover, because Pawlowski teaches away from the claimed invention, there is no suggestion or motivation, either in the Pawlowski reference or to one of ordinary skill in the art, to modify Pawlowski in order to provide amended Claim 1 or to combine Pawlowski with any other reference, including Garnier, Yamada or Kawachi. For this reason, there is no

reasonable expectation of any success or predictability in Pawlowski to provide Applicants claimed invention. In view of all factual information, amended Claim 1 is not anticipated by nor as a whole obvious over Pawlowski.

Claims Rejections - 35 U.S.C. § 112, first paragraph

On page 6 of the Office Action, the Examiner rejected Claims 1-3 and 5-15 under 35 U.S.C. 112, second paragraph, for not setting forth subject matter regarded as the invention. In particular, the terms "an alkali content of less than about 10 wt.% based on the weight of the microsphere" is stated to be indefinite with respect to the limitation of "about 4 to 10 wt.% sodium oxide." Applicants point out that paragraphs [0020] and [0026] specifically discloses "an alkali metal oxide content of less than about 10 wt.%." Furthermore, Applicants disagree that the two limitations contradict one another. In fact, the Examiner appears to be in agreement with this by stating on page 8 of the Office Action that "'About' permits some tolerance." In addition, Applicants have amended Claim 1 to include "between about 4 to 10 wt.% sodium oxide." Accordingly, Applicants submit the terms referred to herein are not indefinite and overcome rejections under 35 U.S.C. 112, second paragraph.

On page 7 of the Office Action, the Examiner states, "It is not clear in claim 1 that applicants do not claim silica. . . applicants' specification requires it to be an aluminosilicate material. The synthetic microsphere cannot be aluminosilicate if there is no silica in the claimed composition of claim 1." Applicants have respectfully amended claim 1 to include

synthetic microspheres comprising an aluminosilicate material further comprising about 30-85% silicon oxide. Support for this amendment may be found throughout the originally-filed specification, e.g., para. [0026]. Applicants further point out that one of ordinary skill would not use a soda lime borosilicate material in an invention requiring aluminosilicate material. Accordingly, Applicants submit amended Claim 1 sets forth subject matter that Applicants regard as their invention.

On page 7 of the Office Action, the Examiner states, "Applicants do not particularly point out and distinctly claim that their claimed composition of claim 1 must contain other oxides including titania and iron oxide in amounts up to 20 wt%." Applicants respectfully point out that Applicants have claimed a patentable portion of their invention including that which they believe patentably defines their invention. Applicants further point out that such specification discloses both a broad invention and one such patentable portion. For example, as disclosed in the originally-filed specification, such as at para. [0025] and [0040] it is disclosed that "synthetic microspheres has one or more of the following characteristics." The specification does not specify that a patentable portion of their invention must contain other oxides including titania and iron oxide in amounts up to 20 wt%. Accordingly, Applicants submit they particularly point out and distinctly claim a patentable portion of their invention as supported by their specification.

Applicants thank the Examiner for discussing statements on page 4 of the Office Action, in which the Examiner points out

that he tried to search the internet for a compositional breakdown of Scotchlite™ glass microsphere but could not find it and asked if Applicants can secure a data sheet of this to resolve a question about potential overlapping ranges over Scotchlite. As discussed with the Examiner on May 17, 2006, Applicants respectfully submit to having no readily available data sheet nor any specific references for such glass microsphere. However, as further discussed on May 17, 2006, Applicants submit a Material Safety Data Sheet available online for 3M™ glass bubbles, Type K and S (see Exhibit A) which shows the ingredients of said glass bubbles to be only soda lime borosilicate glass (97-100 wt.%) and amorphous silica (<3%). Accordingly, Applicants submit that the instant invention is not anticipated nor is it made obvious by the above-cited references.

CONCLUSION

Applicants respectfully submit that the Application is in condition for allowance, and Applicants earnestly seek such allowance of Claims 1-3 and 5-15 as provided in the Listing of Claims beginning on page 3 of this paper. Should the Examiner have questions, comments, or suggestions in furtherance of the prosecution of this Application, please contact Applicants' representative at 214.999.4330. Applicants, through their representative, stand ready to conduct a telephone interview with the Examiner to review this Application if the Examiner believes that such an interview would assist in the advancement of this Application.

To the extent that any further fees are required during the pendency of this Application, including petition fees, the Commissioner is hereby authorized to charge payment of any additional fees, including, without limitation, any fees under 37 C.F.R. § 1.16 or 37 C.F.R. § 1.17, to Deposit Account No. 07-0153 of Gardere Wynne Sewell LLP and reference Attorney Docket No. 129843.1104. In the event that any additional time is needed for this filing, or any additional time in excess of that requested in a petition for an extension of time, please consider this a petition for an extension of time for any needed extension of time pursuant to 37 C.F.R. § 1.136 or any other section or provision of Title 37. Applicants respectfully request that the Commissioner grant any such petition and authorize the Commissioner to charge the Deposit Account referenced above. Please credit any overpayments to this same Deposit Account.

Attorney No. 129843-1104 (HARD1.090A4)
Customer No. 60148

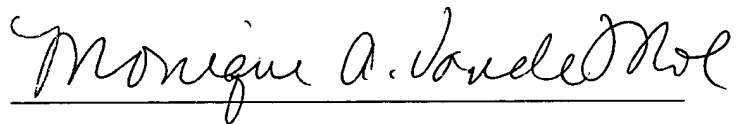
AMENDMENT AND RESPONSE
APPLICATION NO. 10/648,009

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This is intended to be a complete response to the Office
Action mailed January 17, 2006.

**Please direct all correspondence to the practitioner listed
below at Customer No. 60148.**

Respectfully submitted,



Monique A. Vander Molen
Registration No. 53,716

Gardere Wynne Sewell LLP
Thanksgiving Tower
1601 Elm Street, Suite 3000
Dallas, Texas 75201-4761
Telephone: 214.999.4330
Facsimile: 214.999.3623
Email: ip@gardere.com

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